

REMARKS

This Amendment is in response to the Final Official Action mailed January 30, 2008. The Examiner set a shortened statutory period for reply of three (3) months, making the present Response due by April 30, 2008. Filed herewith is a Petition for 3-Month Extension of Time and the appropriate fee, making the present response due on July 30, 2008. The present paper is filed together with a Notice of Appeal under 37 C.F.R. § 41.31(a).

In the present paper, claims 1, 5, 6, 17 and 18 are amended. Claims 1-19 are presented for the Examiner's consideration.

Claim Status

In the Final Official Action, the Examiner has maintained the rejection of claims 1-5, 9-16 and 19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,077,159 to Reimer et al. ("Reimer") in view of U.S. Patent No. 6,375,413 to Stones ("Stones"); and has maintained the rejection of claims 6-8, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Reimer in view of Stones, and further in view of U.S. Patent No. 6,545,508 to Toshima et al. ("Toshima").

Claim Rejections

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. M.P.E.P. § 2143.03 (citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).

Each of the independent claims 1 and 5 has been amended to more clearly define the claimed "flange-like cylinder" as being supported by the support plate, and to incorporate valves with valve stems extending through the support plate. Claims 6, 17 and 18 have been amended to remove subject matter incorporated from those claims into the independent claims.

Specifically, each of the independent claims now requires a load-lock housing

including a first load-lock chamber and a second load-lock chamber

and further defines a mating system that

includes a support plate extending radially inwardly of the load-lock housing, [and] a flange-like cylinder supported relative to the load-lock housing by the support plate.

Each of claims 1 and 5 additionally requires the following:

a first valve selectively providing communication between the dry vacuum pump and the first chamber and a second valve selectively providing communication between the dry vacuum pump and the second chamber, the first and second valves including valve stems extending through the support plate.

That amendment is fully supported by the specification as filed, at least at page 5, line 31 - page 6, line 27. Applicants assert that independent claims 1 and 5, together with the dependent claims, are patentable over the art cited by the Examiner at least because that art does not teach or suggest the claimed configuration of the support plate and valves.

As best shown in FIG. 2 of the present disclosure, the support plate 60 extends radially inwardly of the cylindrical wall portion 59 of the load-lock housing. The flange-like cylinder 50 is supported by the support plate 60. The valve assemblies 65, 66 each include a valve stem 68 provided through the support plate 60. The inventors have discovered that such an arrangement allows placement of the separate valve assemblies 65, 66 in communication with the separate load-lock chambers 21, 22 while maintaining low resistance between the vacuum dry pump 12 and the chambers.

No art of record teaches such an arrangement, and such an arrangement is not suggested by any of the art of record individually or in combination. In the Final Official Action, Reimer is alleged to disclose that the pump may be directly connected to and abutting the load-lock chamber. Reimer provides no disclosure of any structure to accomplish that arrangement, and certainly does not disclose the structure claimed in amended claims 1 and 5, including a support plate, valves and valve stems.

The Examiner alleges that Stones teaches a flange-like cylinder, and the Examiner further construes the "unnumbered bolting flange" of FIG. 1 to be the claimed mating system. Stones, however, provides no disclosure of valves providing communication between the dry vacuum pump and load-lock housing chambers, and does not teach valve stems extending through a support plate that extends radially inwardly from a load-lock housing and that supports the flange-like cylinder.

The Toshima patent is alleged to disclose two load-lock chambers. The Examiner notes that the use of a single pump would inherently require a valve system isolating the first and second chambers from the pump. The allegedly inherent valve system of Toshima certainly does not teach or suggest any structure of the valve. Toshima furthermore does not disclose a mating system as claimed, but instead shows unnumbered forelines connecting the pumps 19, 20 with the chambers 8, 9. Toshima therefore does not teach valve stems extending through a support plate that extends radially inwardly from a load-lock housing and that supports a flange-like cylinder, as required by the independent claims.

Applicants therefore assert that the cited Reimer, Stones and Toshima references, taken alone or in combination, do not teach all the limitations of the independent claims as amended, and that those references therefore do not constitute a *prima facie* obviousness rejection.

Helical Structures

Claim 1 requires “flanges having helical structures selectively provided on [four cylindrical structures]”. In the Amendment filed on December 18, 2007, the Applicants asserted that “claim 1 recites helical structures on four different cylindrical structures.” The Examiner responded in the Final Official Action that “the term selectively does not require that all the elements include the helical structure” Based on the Examiner’s response, it has become apparent to the Applicants that what was intended to be conveyed in the Amendment of December 18, 2008 was that claim 1 does not require that all cylindrical elements include the helical structure. Instead, Applicants submit that the plain meaning of claim 1 requires that the helical structures be provided on one, two, three or all of the four cylindrical structures.

Entry of Amendments

Applicants request that the Examiner enter the amendments presented in this paper under the discretion provided by 37 C.F.R. § 1.116(b). Specifically, Applicants submit that the clarification of the term “flange-like cylinder” in claims 1 and 5 is an amendment complying with a requirement of form set forth in the Final Office Action of January 20, 2008, wherein the Examiner requested that such a definition be explicitly added to the claims (Final Office Action of 1/30/08, at 3, lines 12-13).

Applicants further submit that the incorporation of the chamber and valve elements from dependent claims 6, 17 and 18, and the further definition of the "valves" by including the valve stems, place the rejected claims in better form for consideration on appeal by clarifying the claim terms.

Conclusion

Applicants therefore respectfully submit that the present amendment to the claims be entered, that pending claims 1-19 as amended are in condition for allowance, and earnestly solicit a Notice of Allowance and that the application be promptly passed to issue.

Should the Examiner have any questions regarding the present case, the Examiner should not hesitate in contacting the undersigned at the number provided below.

Respectfully submitted,



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